The Possible Hidden Cause of Post Traumatic Stress Disorder, Anorexia Nervosa, Panic Disorder and Other Related Conditions and States.

Accounting for the existence of conditions such as post traumatic stress disorder, panic disorder, and anorexia nervosa is problematic. It would appear as if these conditions have been attributed to disease, disorder, or genetic abnormality almost by default, fore why else would such harmful conditions as these exist? I believe that I know why. I believe that these, and a host of other harmful and unpleasant conditions and states, are not caused by disease, disorder, or abnormality at all, but exist because they have actually been beneficial.

Exposure to threat and adversity can activate processes within many different parts of our brain. I believe that there is a mechanism within our brain that can expose the individual to threat and adversity in order to activate one of these internal processes, a process that responds only to threat or adversity, either real or perceived, and cannot otherwise be internally effected. I believe that post traumatic stress disorder, panic disorder, anorexia nervosa, and a great many other unpleasant and harmful states and conditions, are the various means this mechanism uses to expose the individual to threat or adversity, in order to sustain this internal process. In other words, I believe that these unpleasant and harmful states and conditions are actually stimuli that this mechanism initiates in order to elicit a specific response from within the brain. I believe that this mechanism exists because it has created a survival advantage for its bearers. More specifically, I believe that this mechanism exists because it is able to circumvent an impediment to the growth and development of the cerebral cortex, thus giving the individual the survival benefits that this growth and development affords. In order to explain in greater detail, some background information is necessary.

There is a model that can be useful in the understanding of our brains development, known as the triune brain theory. This model, which was developed by Dr. Paul MacLean, the former director of the Laboratory of Brain and Behavior at the United States National Institute of Mental Health, is based on the brains evolutionary development. In this model, the brain is viewed as consisting of three basic parts; it is, in effect, three brains in one. Each 'brain', or region, generally corresponds to a stage of our evolutionary development: reptilian, mammalian, and human, or primate. All are separate but interconnected, and each is equipped with its own unique response to threat. Each of these "brains" developed in succession, in response to evolutionary events and pressures. While this theory has proved to be somewhat problematic in dealing with the specifics of brain function, in that it is now known that certain of its functions have migrated as our brain has developed, it is still valuable in describing the basics of our brains evolutionary development.

The first, and oldest, part of our brain is reptilian region. It mainly consists of the brain stem and the cerebellum. This section of the brain is predominantly concerned with survival, including reproduction, defense, the search for food, and the functioning and maintenance of the physical body. Heartbeat, breathing, digestion, immunity, thirst, and sexual desire all originate here. The reptilian region is also responsible for the acute stress response, otherwise known as the fight-or-flight response, a series of physical, mental, and emotional changes which prepare us to cope with conflict, as well as the 'all-or-nothing' reptile response to threat. All of the behaviors of this section of the brain are automatic, instinctual, and highly resistant to change. The reptilian brain is concerned only with its own survival

and well-being.

The next region to develop was the mammalian brain, otherwise known as the limbic region, which sits directly atop the reptilian region. This is the emotional brain. The mammalian brain initiated a new set of instincts, many of which were modifications and refinements of old reptilian drives. For example, since mammalian young arrive in a helpless and vulnerable state, and must be cared for by others, the reptilian drive for reproduction was augmented by the mammalian instinct for child rearing. The mammalian brain is also capable of experiencing much more complex emotions than the reptilian brain. When coupled with its ability to consider the needs of others, this allows it to function in social hierarchies. The mammalian brain determines valence, whether something is positive or negative, agreeable or disagreeable. For the mammalian brain, survival depends on the avoidance of physical and emotional pain, and the repetition of pleasure. It records memories of behaviors that produce good and bad results, and evaluates sensory experience in basic, general terms such as "good = safe," and "bad = dangerous." It initiates the mammalian defense posture, which consists of menacing poses, facial grimaces, and threatening noises. Because the mammalian brain can link behavior with emotion, it has the ability to inhibit the reptilian regions automatic responses. It is also capable of controlling the fight-or-flight response.

The newest section of the brain is the cerebral cortex, also known as the primate brain, or human region. This is the intellectual brain. The cerebral cortex is present in some other highly intelligent mammals, notably whales, apes, and dolphins. Among other things, it is responsible for awareness, decision making, voluntary movement, attention, language, reading and writing, judgment, reasoning, imagination, and all conceptual thought, allowing us to imagine alternate and future realities, and to plan for future events. Thus, while less highly evolved mammals might experience fear, human beings are capable of worry. While a zebra cannot fear the predator that might appear at some future time, human beings are capable of imagining threats and dangers that do not yet exist and reacting to them almost endlessly. The cerebral cortex seldom deals with the environment directly, but with symbolic representations of it, both positive and negative. Both creativity and cooperation originate here, which allow human beings an incredible number of options and behavior choices, including the option to forego competition for the common good.

When the individual is exposed to threat or adversity, in all but the most extreme cases the reptilian brains aggressive defenses are inhibited by a component within the mammalian region. This ability exists because it prevented these defenses from impeding the development of the much more flexible and efficient mammalian region, which had resulted from these defenses high rate of consumption of bodily resources, especially oxygen and glucose, and the high levels of adrenalin they had introduced into the blood stream, which had constricted blood vessels and inhibited the flow of blood to the rest of the brain. Additionally, the reptilian brain, being located below the mammalian brain, is first in line for the bodies valuable resources, and when the reptilian brain perceives threat, it can attempt to keep all of these resources for itself, and in the process withhold them from the rest of the brain. The ability to inhibit these aggressive defenses eventually allowed the much more sophisticated mammalian brain to develop new methods of dealing with threat, such as the above mentioned mammalian defense posture, which used far fewer resources than the reptilian brains defenses used. These aggressive defenses were not eliminated, since they had been an effective part of the individuals overall defenses, but were eventually relegated to the defenses of last resort.

I believe that a problem was created when the cerebral cortex developed the ability to imagine future threats and dangers that did not yet exist, since it is also possible, somehow through our brains interconnections, for the reptilian brain to react to these imagined threats and dangers, as well. I believe that this became problematic when, following exposure to sufficiently intense or prolonged levels of actual threat or adversity, our brain became able to extend its quest to identify future threats and dangers over long periods of time, as it also had done with the acute stress response. This ability in-

creased survival by allowing the individual to be identify and prepare for possible threat before it occurred, but also exposed the reptilian brain to imagined threats and dangers for extended periods of time, thus stimulating its aggressive defenses once again. Since there was no actual threat stimulus present to cause the mammalian brain to adequately inhibit the reptile brains defenses, I believe that this caused these defenses to impede the growth and development of the cerebral cortex as they had previously impeded that of the mammalian brain, by introducing even more adrenalin into the blood stream, and by overusing the brains valuable resources.

As I stated previously, I believe that there is a mechanism within our brain that can expose the individual to threat and adversity. I believe that this mechanisms purpose is to supply the missing threat stimulus that causes the mammalian brain to inhibit the reptile brains aggressive defenses when they are stimulated by imagined threat. After the individual has experienced sufficient threat or adversity to cause the cerebral cortex to sustain production imagined threat after the actual threat has passed, this mechanism causes the mammalian brain to maintain inhibition of the reptile brains defenses by exposing the individual to additional threat and adversity. It creates this additional threat and adversity by negatively impacting the individuals thoughts, emotions, actions, behaviors, senses, and physical and mental states, as seen in a whole host of unpleasant or harmful conditions and states, including post traumatic stress disorder, panic disorder, and anorexia nervosa (a more complete list appears at the end of this paper). It then maintains this exposure until the reptile brains defenses are no longer in danger of being activated by imagined threat, thus preventing them from impairing the cerebral cortex's growth and development. While this mechanism has many obvious drawbacks, I believe that it functions in this manner because it allowed it to develop within existing neurological systems and structures, enabling it to become viable with a minimum of physical adaptation.

Unfortunately, this mechanism creates additional conflict and harm in individuals who have already been exposed to elevated or prolonged levels of threat or adversity. It places them in the position of being torn between two opposing forces; the need for self preservation, and the drive to experience threat and adversity in order to cause the mammalian brain to prevent the reptile brains defenses from impairing the cerebral cortex's development. While the cost or this mechanism to the individual is obviously extremely high, it allows the brain to strike an important balance, that of achieving as much survival advantage as possible by identifying threats and dangers before they occur, while still achieving as much growth and development as possible from the cerebral cortex, and along with it, the survival advantages that this growth and development produces.

I believe that this mechanism is present and active in all of us, though in most of us usually at low enough levels to be easily overlooked, dismissed, or explained away. This is because the effects of this mechanism vary greatly in intensity and duration from one individual to the next, depending upon their physical, psychological, and genetic makeup, their personal life experience, their sensitivity to a given stimulus, and their history of exposure to threat and adversity. In some people its effects are barely noticeable, posing only the most minor of short-term inconveniences, such as getting a song stuck in their head that they can't get rid of, starting an argument, or perhaps just having an "off" day, while in others, its effects can be completely devastating and last for years, as in post traumatic stress disorder, panic disorder, and anorexia nervosa.

Given the fact that we function within social hierarchies, it is not only possible for our brain to assign valence to experiences that effect us directly, but to experiences that effect others, as well. This is beneficial because so much of our safety and security, as well as our very survival, can depend upon the cooperation and good will of others. Thus, in addition to increasing threat and adversity by effecting the individual directly, I believe that this mechanism can also subject the individual to threat and adversity by causing them to harm others and to violate social and personal codes of conduct, resulting in the loss of social status and benefit, ostracism, punishment, retaliation, etc.

While until now I have focused on this mechanisms ability to achieve its end by increasing threat and adversity, it should be noted that it can also do so by decreasing pleasure and safety. This is due to the fact that, at its most basic emotional level, our brain insures the safety and survival of the individual not only by avoiding threatening, or negative, experiences, but by reproducing pleasurable, or positive, experiences, as well. Thus our brain will not only assign a negative valence to increased negative experience, but to decreased positive experience, as well.

When the individual is exposed to increased levels of positive experience, this mechanism can compensate in several different ways, including by increasing negative experience. This can often be seen in drug and alcohol abuse, where it may compensate for the euphoria created by the drugs or alcohol by causing the individual to become abusive, violent, self destructive, etc. I believe that this also explains why victims of domestic violence and child abuse so often end up in unhappy or abusive relationships. In problem shopping and problem gambling, it may cause the individual to become so obsessed with these activities that they cannot stop indulging in them, ultimately exposing the individual to negative experience by creating financial hardship, and all of the problems that go with it.

This mechanism can also compensate for increased positive experiences by reducing or eliminating them, as well. Anorexia nervosa is a good example of this phenomenon. Individuals who develop this condition usually have a history of exposure to threat and/or adversity and it is not uncommon for them to have been victims of child sexual abuse. They tend to suffer from feelings of inadequacy and hopelessness, have unrealistically high expectations of themselves, and feel that their lives are largely out of their own control. Because of the high value that our culture places on thinness, and the individuals perception that they are unacceptably over weight, they come to view weight loss as a vehicle for improving the quality of their life, as well as a way of regaining their lost sense of control over it. When they realize that they are able to loose weight successfully, and begin to experience the emotional benefits they had hoped for, this mechanism removes their ability to perceive their own weight loss, and along with it the emotional benefits that they had begun to experience, causing the individual to increase their efforts to loose weight in order to regain them.

This mechanism can also decrease safety by making negative or harmful experiences appealing and pleasurable, and in so doing insure that these things will be voluntarily repeated. It may cause sex to be more appealing if it is painful, violent, abusive, degrading, disgusting, self-destructive, etc. In pyromania or self-injury, it may subject the individual to increased levels of anxiety or dysphoria, then reduce them as a kind of reward after the individual cuts themselves, sets a fire, etc., insuring that these behaviors will be willingly repeated. Compulsive thrill seeking, sadism, masochism, pedophilia, animal abuse, and even serial murder are some the other ways in which I believe this phenomenon can manifest itself.

The following is a partial list of the ways in which I believe this mechanism can manifest itself:

1. Emotional disorders: anorexia nervosa, bulimia nervosa, body dysmorphic disorder, certain obsessive-compulsive disorders, adjustment disorder, depressive disorders, anxiety disorders, including post traumatic stress disorder, certain phobic disorders, acute stress disorder, rage attacks, personality disorders.

2. Stress induced illnesses and conditions: diabetes, Cushing's syndrome, heart disease (six fold increase) and other stress related heart conditions, functional gastrointestinal disease, fibromyalgia, chronic fatigue syndrome, rheumatoid arthritis, pain disorder, allergies, asthma.

3. Destructive, frightening or disturbing thoughts, emotions, behaviors: antisocial personality disorder, pyromania, child abuse, pedophilia, Intrusion (intrusive thoughts, flashbacks), kleptomania, domestic violence, animal abuse, sadism, rape, murder, serial murder.

4. Self-destructive, self-abusive or self-defeating thoughts and behaviors: masochism, poverty and homelessness, prostitution, unsafe sexual practices, teen pregnancy, obesity, smoking, drug abuse, alcoholism, self harm, problem gambling, problem shopping, various compulsive behaviors such as compulsive overeating, compulsive thrill seeking, compulsive risk taking, compulsive over-exercising.

5. Virtually any experience, behavior, state, condition or circumstance which can be perceived or experienced as unpleasant, negative, frightening, dangerous or harmful, and which either potentially or actually effects the individual or those within the individuals sphere of influence. This may include: executive dysfunction, Tourette's syndrome, atypical facial pain, sensory integration dysfunction.

Walter G. Turner
Portland, Oregon, USA
5/29/07

© Copyright 2007 by Walter G. Turner. All Rights Reserved